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October 27, 1938

S
Control-Insect
Annual Report

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12/3/38

Chief,
Forest Service,
Washington, D. C.

Dear Sir:

The summary of reports received from the Supervisors, individual forest officers and Dr. J. A. Beal, entomologist of the Fort Collins Laboratory, covering insect conditions on the forests of the Region gives a picture for the region during the year 1938.

Insect damage on the forests in general appears to have decreased from that of 1937. All forests show normal conditions except the Carson, Santa Fe, Lincoln, Prescott, Kaibab and Tonto.

Carson Forest

The reported damage caused by Dendroctonus beetles during 1936 and 1937 appears to be decreasing and normal on all areas except areas on private lands within the Rio Grande Grant and along the west side of Moreno Valley in the vicinity of Moreno and Cieneguilla Creek drainages. These areas were looked over by Dr. J. A. Beal of the Fort Collins Laboratory late in August. The following is quoted from his report covering the Carson Forest dealing with these areas especially:

"In general the ponderosa pine type of the forest appears to be singularly free from serious insect damage. There is, however, indication of some infestation by the Black Hills beetle (Dendroctonus ponderosae Hopk.) on nearby private lands and these infestations should be closely watched unless the individuals on whose land they occur can be persuaded to clean them up. The first of these areas noted was on the Rancho del Rio Grande Grant on the Rio Grande del Rancho river just north of Gallegos Peak. This area was seen only from a distance but a few groups of red-top

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cc-Dr. Beal, Fort Collins Laboratory

trees estimated to vary from 5 to 10 trees in a group could be seen. The infestation is about 3 or 4 miles from the national forest boundary and is located on land now belonging to the Santa Fe Railroad company. Since it is possible to observe most of this area from high vantage points it is likely that most of the infestation can be seen in this way. This appears to be a small infestation of possibly not over a few hundred trees (200 to 300). It is quite a distance from national forest lands and thus far has shown no tendency toward increasing to dangerous proportions. Mr. Salton advised me that they had been watching this area for the past few years and had noted no appreciable increase in the infestation. Unless the infestation builds up rapidly and threatens national forest timber, control work by the Forest Service is probably not advisable.

"A second area which carries some infestation by the Black Hills beetle is the private land east of the forest boundary along the Moreno and Cieneguilla Creek drainages which empty into Eagle Nest Lake. This small infestation offers little threat to Forest Service timber. It is about 3 miles from the forest boundary and the timber type changes as the boundary is approached so the chances of serious spread of this outbreak are remote. A few other infested trees occur along the drainages mentioned above but largely as single trees. If the local sawmill men could be prevailed upon to log their "bug trees" while they are still green they could easily control the small infestation near their location and do it at a profit. Since the timber is cut by jobbers and not by the owners this arrangement might be difficult to make. The infestation near the mill on Highway 120 (T 26 N, R 16 E) should undoubtedly be controlled. The scattered trees on the rest of the area are not considered of serious enough nature to warrant control."

Control Work: An area of approximately 8,000 acres in the Rio Pueblo River drainage was covered in control work with a small ERA crew during November and December, 1937. There were a number of widely scattered groups of dead and dying trees showing on this area at that time. However, very few newly attacked trees were found and treated. An examination of this area in August, 1938, showed the insect damage as normal again, with only widely scattered individual trees showing.

The tent caterpillar infestation is declining throughout the forest with only a few newly infested areas appearing during the past year. The WPA study project under Norman Appleton of Santa Fe has been conducted throughout the year. The following is taken from a letter dated September 30, 1938, written by Mr. Appleton to Forest Supervisor Merker:

"In our efforts this summer to stem the outbreak of tent caterpillars at Tres Ritos and prevent them from spreading into the Taos Mountains, we introduced three widely different kinds of parasites. These consisted of the following:

3,000 digger wasps	(Padalonia violacaipennis)
45,000 parasitic flies	(Sarcophaga aldrichi)
500,000 egg chalcids	(Tetrastichus malacosomae)

These parasites are all specific for the Rocky Mt. tent caterpillar and therefore can have no injurious effects on other insects.

"After watching closely the results of these introductions, I am very pleased to report that we believe we have succeeded in checking this invasion of caterpillars. However, should additional appropriations be forthcoming, we shall continue to keep a watchful eye on this area and follow up our work there with more liberations should the number of parasites now in that section still prove insufficient."

As to whether or not introduced parasites have had any appreciable effect on the spread of the tent caterpillar we are not prepared to say, but it would appear that if conditions for the build-up of predators are good then the host will be destroyed without resorting to introduction of artificially propagated predators or parasites.

Santa Fe Forest

Insect conditions on the Santa Fe Forest are about the same as they were in 1937. Dr. J. A. Beal visited the Santa Fe during the same period he visited the Carson. During his trip on the Santa Fe he was enabled to see insect conditions on ponderosa pine, Douglas fir and spruce types. The following is quoted from his size-up of insect conditions on the Santa Fe:

"Occasional red-top pines were cut into to determine the cause of their death but in all cases they had been attacked chiefly by the southwestern pine beetle (Dendroctonus barberi Hopk.) aided by the engraver beetles (species of Ips). Dead trees occurred chiefly single and in no case was any tendency toward group killing noticed. In fact the ponderosa pine type of the forest appears to be very free from insect infestation and it therefore appears unnecessary to give it further special attention at this time.

"In Holy Ghost Creek west of Terrero there is very heavy loss to Douglas fir as a result of an outbreak of the Douglas fir beetle (D. pseudotsugae Hopk.). A high percent of the fir in some spots has already been killed but according to Mr. Salton this area looks better now than it did a year or two ago. This is a wilderness area where no cutting of timber is permitted and in all probability

the mature Douglas fir will be periodically killed by insects. At the present time the infestation is too general and widespread for control work to be entomologically sound. Other nearby canyons where Douglas fir was found are likewise infested although the heaviest noted was in Holy Ghost Canyon. A number of dead Engelmann spruce were also observed along the bottom of the canyon; however, the insects here are apparently reduced to an endemic condition, since no new attacks by the Engelmann spruce beetle (D. engelmanni) could be found. Control work against the Engelmann spruce beetle in Gallinas Canyon west of Gallinas was apparently successful since no new attacks could be found.

"Under the present endemic conditions no insect control work is recommended in the ponderosa pine stands of the forest. The same statement applies equally as well to the Engelmann spruce stands observed. Because of the general character of the infestation in Douglas fir and the fact that much evidence points toward decreasing infestations in this timber type, control work against the Douglas fir beetle is not recommended at this time."

The tent caterpillar conditions are on the decline throughout the Pecos Division of the forest.

The spruce budworm attacks on both the Santa Fe and Carson Forests show some decline in damage from last year; however, on some of the heavy Douglas fir and spruce areas this damage appears about normal.

Coconino Forest

Insect conditions on the Coconino are about normal again this year. The 1937 annual report mentioned two areas which showed active insect work. One of these areas northeast of Flagstaff along Highway #89 near Black Bill Park consisted of killing by Ips of the tops of a number of trees; later, the trunks of these trees were attacked by Dendroctonus convexifrons, approximatus and possibly barberi, which completed the killing of the trees. An examination of the area during October, 1938, showed this attack greatly declining as only a few new tops appear to have been attacked during the year. The other area which is located along the Flagstaff-Schnebley Hill Road near Foxborough Ranch consisted of a few scattered groups of ponderosa pine trees. These trees showed active dendroctonus barberi, convexifrons and approximatus in October, 1937. There were also some Ips found in the killed trees. Control work was done on this area by CCC crews during the early part of

December, 1937. The control work consisted of cutting and treating 35 ponderosa pine trees between the diameters of 4 to 12 inches d.b.h. and 13 trees between the diameters of 22 and 34 inches. The area treated was examined during October, 1938, and found to be practically free of insect damage, there being only two noticeable trees and these both had been struck by lightning. This shows that the control work was successful. Insect conditions on the rest of the Coconino are normal.

Lincoln Forest

Insect conditions on the Lincoln havegreatly improved since our annual report of 1937. Dr. J. A. Beal of the Fort Collins Laboratory spent two days on the forest during August. The following is taken from his report of insect conditions on the Lincoln at that time:

"The examination showed that the dying of the pines was caused principally by the work of the roundheaded pine beetle (Dendroctonus convexifrons Hopk.). Also present in many of the infested trees and undoubtedly contributing to their death were several species of engraver beetles, chiefly Ips oregoni Eich., I. knausi Sw., I. cloudcrofti Sw., and I. integer Eich. A few D. approximatus Dietz were also present at the base of some of the larger trees. One peculiarity of the infestation of the roundheaded pine beetle was that by far the larger portion of it occurred in the young pole size stands of ponderosa pine, and the attack was found extending from the base well up into the tops of the trees. Heretofore this insect has only been reported as attacking the lower portions of trees previously infested by other bark beetles and as sometimes being primary on decadent or weakened trees. It is generally considered as being secondary and relatively unimportant.

"The areas examined in the Sacramento Mountains of the Lincoln National Forest were the Dry Fresnal Canyon area between Alamogordo and Cloudcroft, Cox Canyon, Eight Mile Canyon, and James Canyon. According to Asst. Supervisor Wang the Forest Service treated between 40 and 50 thousand infested trees last year in the general vicinity of these areas. Because of the fact that so many infested trees were small pole size material occurring in large groups the number of trees treated is perhaps not a fair measure of the situation. The treated portions of all of the above areas on the Lincoln National Forest are now very free from insect infestation; however, scattered throughout these areas especially in James Canyon and Cox Canyon, are a large number of private land areas where no control work has been done and on these a large number of red-top trees and groups of red-tops occur. Careful search in many of these infested spots

revealed no new attacks whereas at this time last year, according to Mr. Wang, many new attacks could be found. Many 'pitchouts' of last year were observed. Poor broods could be found in most of the red-top trees.

"The areas examined in the Ruidoso District, that is Ruidiso Canyon, Little Creek and Cedar Creek, showed a more aggressive infestation of the roundheaded pine beetle than in the Sacramento Mountains. Most of the associated insects previously mentioned were also found. Here it was possible to find new spring attacks although many 'pitchouts' were also in evidence but in trees successfully attacked the broods appeared to be better than those on the other areas. Since the Ruidoso Canyon is one of high recreational use it would no doubt be advisable to do control work herein spite of the fact that the infestation appears to be decreasing. The pines on the Little Creek area contain one of the worst mistletoe infestation I have ever seen. Trees are dying both as a result of mistletoe infection and of beetle infestation. A trip was made to Monjeau lookout in order to bester see the surrounding country. Some large infested groups could be seen on the Mescalero Indian Reservation on upper Ruidoso Creek.

"The outbreak of the roundheaded pine beetle on the Lincoln Forest appears to be definitely on the decrease, however since the main flight of this insect occurs during September and October it is yet too early to be sure how much infestation will be present this fall. It would no doubt be advisable for Mr. Wang to look over the same country again in early November for attack by the later emerging beetles and any decision regarding control work should be based on his report."

Control work was done on the forest during November and December, 1937, and January, February and March, 1938, by CCC crews. These CCC crews spent 10,730 man days on control work, covering an area of 9,566 acres. The volume of timber treated in this control work amounted to approximately 4000 M feet, exclusive of poles below 12 inches d.b.h.

An examination of the area mentioned by Dr. Beal during October, 1938, shows that little change has taken place in the number of insect infested trees since Dr. Beal's examination in August. Examinations during the 1938 field season of areas on which this control was done show that the work has been successful.

Prescott Forest

The Supervisor's report shows considerable insect damage on the forest during the year in the ponderosa pine type. This damage occurs on three areas, viz: Camp Wood area on the Walnut Creek Ranger District where the kill by bark beetles is approximately 50 percent